

# **ARCHIVES OF ORAL BIOLOGY**

**A MULTIDISCIPLINARY JOURNAL IN ORAL RESEARCH**

**VOLUME 37, 1992**

**VOLUME CONTENTS  
AND AUTHOR INDEX**



**Pergamon Press**

**Oxford New York Seoul Tokyo**

**ARCHIVES OF ORAL BIOLOGY**  
A Multidisciplinary Journal in Oral Research

---

**EDITORS-IN-CHIEF**

Dr D. B. FERGUSON, Department of Physiological Sciences, Stopford Building, University of Manchester, Manchester M13 9PT, U.K.

Dr E. J. KOLLAR, Department of Oral Biology, University of Connecticut Health Center, Farmington, CT 06032, U.S.A.

**FOUNDER EDITORS**

Professor I. R. H. KRAMER

Professor A. E. W. MILES

Professor M. A. RUSHTON

**ACCEPTING EDITORS**

Dr R. M. HOPPS, Department of Oral Biology, Institute of Dental Surgery, 256 Gray's Inn Road, London WC1X 8LD, U.K.

Professor T. LEHNER, Department of Immunology, Guy's Hospital, Guy's Tower, Floor 28, London SE1 9RT, U.K.

Dr J. SODEK, Faculty of Dentistry, University of Toronto, Ontario, Canada M5S 1A8

**ADVISORY BOARD**

W. H. BOWEN (Rochester, U.S.A.)

J. R. MARTINEZ (Albuquerque, U.S.A.)

W. T. BUTLER (Houston, U.S.A.)

C. E. NORD (Stockholm, Sweden)

G. CIMASONI (Geneva, Switzerland)

H. E. SCHROEDER (Zurich, Switzerland)

M. W. J. FERGUSON (Manchester, U.K.)

B. J. SESSLE (Toronto, Canada)

S. HAMADA (Osaka, Japan)

M. TRILLER (Paris, France)

M. C. HERZBERG (Minneapolis, U.S.A.)

J. P. WATERHOUSE (Canterbury, U.K.)

M. J. LEVINE (Buffalo, U.S.A.)

J. A. WEATHERELL (Leeds, U.K.)

*Editorial Assistant: Dr M. EDWARDS*

---

**Publishing Office**

Pergamon Press Ltd, Pergamon House, Bampfylde Street, Exeter EX1 2AH, U.K.  
[Tel. Exeter (0392) 51558; Fax 425370].

**Subscription and Advertising Offices**

North America: Pergamon Press Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A. Rest of the World: Pergamon Press Ltd, Headington Hill Hall, Oxford OX3 0BW, U.K. [Tel. Oxford (0865) 794141].

**Annual Subscription Rates 1993**

Annual institutional subscription rate (1993): £644.00 (U.S.\$1224.00). Sterling prices are definitive. U.S. dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice.

**Back Issues**

Back issues of all previously published volumes, in both hard copy and on microform are available direct from Pergamon Press offices.

Published Monthly. Copyright © 1992 Pergamon Press Ltd

Second class postage paid at RAHWAY NJ. Postmaster send address corrections to *Archives of Oral Biology*, Pergamon Press Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

---

## LIST OF CONTENTS

### NUMBER 1

	Instructions to Contributors	I
P. DUBOVÝ and M. KUKLETOVÁ	A histochemical study by light and electron microscopy of the distribution of dipeptidyl peptidase-IV activity in the human dental pulp	1
K. LAL, L. XU, J. COLBURN, A. L. HONG and J. J. POLLOCK	The use of capillary electrophoresis to identify cationic proteins in human parotid saliva	7
YUTAKA DOI, TAKASHI HORIGUCHI, SEUG-HYO KIM, YUTAKA MORIWAKI, NOBUKAZU WAKAMATSU, MASANORI ADACHI, KYOMI IBARAKI, KEIJI MORIYAMA, SATOSHI SASAKI and HITOYATA SHIMOKAWA	Effects of non-collagenous proteins on the formation of apatite in calcium $\beta$ -glycerophosphate solutions	15
R. A. JALIL, F. P. ASHLEY and R. F. WILSON	The relationship between 48-h dental plaque accumulation in young human adults and the concentrations of hypothiocyanite, 'free' and 'total' lysozyme, lactoferrin and secretory immunoglobulin A in saliva	23
I. MIZUNO, N. SABURI, N. TAGUCHI, M. UEDA, T. KANEDA and T. HOSHINO	Mitotic activity of cells in the fibrous zone of the rat mandibular condyle	29
D. STEINBERG, D. BEEMAN and W. H. BOWEN	The effect of delmopinol on glucosyltransferase adsorbed on to saliva-coated hydroxyapatite	33
P. M. SHARPE, D. M. FOREMAN, M. J. M. CARETTE, S. L. SCHOR and M. W. J. FERGUSON	The effects of transforming growth factor- $\beta_1$ on protein production by mouse embryonic palate mesenchymal cells in the presence or absence of serum	39
E. W. N. LAM and A. G. HANNAM	Regional $^{31}\text{P}$ magnetic resonance spectroscopy of exercising human masseter muscle	49
C. S. SHI and Z. Y. HUA	Correlations between an autoregressive model coefficient of the electromyogram of human jaw-closing muscles and maximum clenching time at the intercuspal position	57
C. P. OWEN, R. J. C. WILDING and L. P. ADAMS	Dimensions of the temporal glenoid fossa and tooth wear in prehistoric human skeletons	63
<b>Short Communications</b>		
J. A. BANDERAS, L. A. GAITAN, J. PORTILLA and A. AGUIRRE	Effects of chronic ethanol consumption on the rat parotid gland	69
P. A. DENNY, S. H. HONG, D. K. KLAUSER and P. C. DENNY	Increased mucin levels in submandibular saliva from mice following repeated isoproterenol treatment	73

### NUMBER 2

C. Z. ZHANG, W. G. YOUNG and M. J. WATERS	Immunocytochemical localization of growth hormone receptor in rat maxillary teeth	77
M. T. HINCKE and SATVINDER K. SOOR	Stimulation of rat parotid secretion by cAMP analogues that synergistically activate the type II isoenzyme of the cAMP-dependent protein kinase	85
J. B. MATTHEWS, G. I. MASON and G. M. LAWRENCE	Epithelial expression of major histocompatibility complex (MHC) antigens in normal rat salivary and lacrimal glands	93
T. TAKEI, T. OGAWA, S. ALALUUSUA, T. FUJIWARA, I. MORISAKI, T. OOSHIMA, S. SOBUE and S. HAMADA	Latex agglutination test for detection of mutans streptococci in relation to dental caries in children	99



K. HASHIMOTO, F. JOSEPH JR, A. U. FALSTER, W. B. SIMMONS and T. NAKAMOTO	Effects of maternal caffeine intake during lactation on molar enamel surfaces in new-born rats	105
A. U. FALSTER, K. HASHIMOTO, T. NAKAMOTO and W. B. SIMMONS	Physical examination of caffeine's effects on the enamel surface of first molar in new-born rats	111
D. TZIAFAS, I. KOLOKURIS, A. ALVANOU and K. KAIDOGLOU	Short-term dentinogenic response of dog dental pulp tissue after its induction by demineralized or native dentine, or predentine	119
JAN E. KRONMILLER, WILLIAM B. UPHOLT and EDWARD J. KOLLAR	Alteration of murine odontogenic patterning and prolongation of expression of epidermal growth factor mRNA by retinol <i>in vitro</i>	129
R. B. RUTHERFORD, M. D. TRAILSMITH, M. E. RYAN and M. F. CHARETTE	Synergistic effects of dexamethasone on platelet-derived growth factor mitogenesis <i>in vitro</i>	139
A. HIROZANE, Y. FUJIKURA, T. SAWADA, F. SHINOZAKI and T. FUKUMOTO	Analysis of major histocompatibility complex (MHC) class I antigen in the rat salivary gland	147
<i>Short Communications</i>		
D. F. KINANE, F. P. WINSTANLEY, E. ADONOGIANAKI and N. A. MOUGHAL	Bioassay of interleukin 1 (IL-1) in human gingival crevicular fluid during experimental gingivitis	153
F. S. NKHUMELANI, E. J. RAUBENHEIMER, J. DAUTH, W. F. P. VAN HEERDEN, P. D. SMITH and M. J. PITOUT	Amino acid composition of dentine in permanent human teeth	157

### NUMBER 3

S. HIDAKA and K. ABE	The effects of sodium lauryl sulphate and its oxidative breakdown products on calcium phosphate precipitation and transformation	159
S. W. COX, M. I. GAZI and B. M. ELEY	Dipeptidyl peptidase II- and IV-like activities in gingival tissue and crevicular fluid from human periodontitis lesions	167
N. VONGSAVAN and B. MATTHEWS	Fluid flow through cat dentine <i>in vivo</i>	175
S. KASHKET and T. YASKELL	Effect of timing of administered calcium lactate on the sucrose-induced intraoral demineralization of bovine enamel	187
JOHAN LUTHMAN, DÉSIÉE LUTHMAN and TOMAS HÖKFELT	Occurrence and distribution of different neurochemical markers in the human dental pulp	193
M. R. ROBINOVITCH, J. M. IVERSEN and K. T. IZUTSU	Inhibition of synthesis of rat parotid secretory proteoglycan in a gland slice system	209
G. W. KROON and M. NAEJE	Electromyographic evidence of local muscle fatigue in a subgroup of patients with myogenous craniomandibular disorders	215
MARKUS M. KOLLER, NOBUKO MAEDA, KARNAM R. PURUSHOTHAM, PHILIP J. SCARPACE and MICHAEL G. HUMPHREYS-BEHER	A biochemical analysis of parotid and submandibular salivary gland function with age after simultaneous stimulation with pilocarpine and isoproterenol in female NIA Fischer 344 rats	219
M. NAKASHIMA	The effects of growth factors on DNA synthesis, proteoglycan syn- thesis and alkaline phosphatase activity in bovine dental pulp cells	231
E. BRAMBILLA, L. STROHMENGER and G. VOGEL	The effect of storage in liquid nitrogen on the isolation of oral yeasts in human saliva	237
<i>Short Communication</i>		
H. SOEDA, F. SAKUDO and J. K. CHEN	Salt-induced electrical epithelial responses of the frog ( <i>Rana cates- beiana</i> ) tongue and their relation to gustatory nerve activity <i>in vivo</i>	241

### NUMBER 4

J. R. RADFORD, K. A. HOMER, M. N. NAYLOR and D. BEIGHTON	Inhibition of human subgingival plaque protease activity by chlorhexidine	245
T. AOBA, S. SHIMODA, H. AKITA, C. HOLMBERG and M. A. TAUBMAN	Anti-peptide antibodies reactive with epitopic domains of porcine amelogenins at the C-terminus	249

G. CRUCCU, G. FRISARDI and D. VAN STEENBERGHE	Side asymmetry of the jaw jerk in human craniomandibular dysfunction	257
G. RAMIERI, G. C. PANZICA, C. VIGLIETTI-PANZICA, R. MODICA, D. R. SPRINGALL and J. M. POLAK	Non-innervated Merkel cells and Merkel-neurite complexes in human oral mucosa revealed using antiserum to protein gene product 9.5	263
N. B. NAGY and J. C. DANIEL	Development of the rabbit craniomandibular joint in association with tooth eruption	271
J. T. TURNER and J. M. CAMDEN	Regulation of secretion by vasoactive intestinal peptide in isolated perfused rat submandibular glands	281
D. O. QUISSELL and L. M. DEISHER	Purification and partial characterization of analogous 26-kDa rat submandibular and parotid gland integral membrane phosphoproteins that may have a role in exocytosis	289
S. BARKER and J. R. MARTINEZ	Na <sup>+</sup> influx mechanisms in submandibular salivary cells of newborn rats	297
A. K. JOWETT, S. J. KIMBER and M. W. J. FERGUSON	Immunofluorescent lectin binding patterns and glycoprotein co-localization in the developing murine molar tooth	303
P.-M. BOURDIOL, L. AIGOUY, J. PAJOT and A. WODA	Masseteric facilitation induced by electrical stimulation of rat orofacial tissues	315

## NUMBER 5

M. WEINSTEIN, Y. H. LIAU, A. SLOMIANY and B. L. SLOMIANY	Glycosaminoglycan patterns in gingival proteoglycans of rat with age	323
LEIGH C. ANDERSON and CAROL A. BEVAN	Effects of streptozotocin diabetes on amylase release and cAMP accumulation in rat parotid acinar cells	331
R. J. MOORE, M. D. McMILLAN and R. T. GILBERT	A scanning electron microscopic study of rete ridges in the cheek pouch of normal young, adult and aged Syrian hamsters	337
D. BEIGHTON, J. R. RADFORD and M. N. NAYLOR	Glycosidase activities in gingival crevicular fluid in subjects with adult periodontitis or gingivitis	343
S. K. KIM, L. M. CUZZORT and R. K. MCKEAN	Amylase mRNA synthesis and ageing in rat parotid glands following isoproterenol-stimulated secretion	349
A. AGUIRRE, L. A. TESTA-WEINTRAUB, J. A. BANDERAS, R. DUNFORD and M. J. LEVINE	Levels of salivary cystatins in periodontally healthy and diseased older adults	355
N. AYASAKA, T. KONDO, T. GOTO, M. A. KIDO, E. NAGATA and T. TANAKA	Differences in the transport systems between cementocytes and osteocytes in rats using microperoxidase as a tracer	363
JOHN A. ROBINSON and BERNARD J. SCHNEIDER	Histological evaluation of the effect of transseptal fibre resection on the rate of physiological migration of rat molar teeth	371
Y. TAKANO, M. A. CRENSHAW and J. W. BAWDEN	Calcium movement <i>in vivo</i> and <i>in vitro</i> in secretory-stage enamel of rat incisors	377
K. BERCOVITZ and D. LAUFER	Systemic lead absorption in human tooth roots	385
R. C. SHORE, I. KOLOKURIS, C. ROBINSON and J. KIRKHAM	Immunohistochemical investigation of epidermal growth factor receptor expression during periods of accelerated rat incisor eruption	389
M. J. DIXON and M. W. J. FERGUSON	The effects of epidermal growth factor, transforming growth factors alpha and beta and platelet-derived growth factor on murine palatal shelves in organ culture	395
M. J. LARSEN and E. I. F. PEARCE	Some notes on the diffusion of acidic and alkaline agents into natural human caries lesions <i>in vitro</i>	411
D. A. HAAS, O. NAKANISHI, R. E. MACMILLAN, R. C. JORDAN and J. W. HU	Development of an orofacial model of acute inflammation in the rat	417

R. J. C. WILDING, L. P. ADAMS and A. LEWIN	Absence of association between a preferred chewing side and its area of functional occlusal contact in the human dentition	423
S. L. BELLAVÍA, E. G. SANZ, R. SERENO and N. T. VERMOUTH	$\alpha$ -Amylase circadian rhythm of young rat parotid gland: an endogenous rhythm with maternal coordination	429

## NUMBER 6

	Instructions to Contributors	III
D. WRAY and L. GRAHAME	Periodontal bone loss in mice induced by different periodontopathic organisms	435
S. YAMAGUCHI	Analysis of stress-strain curves at fast and slow velocities of loading <i>in vitro</i> in the transverse section of the rat incisor periodontal ligament following the administration of $\beta$ -aminopropionitrile	439
L. MATSSON	Mast cell heterogeneity in various oral mucosal sites in the rat	445
NAOHISA HARAGUCHI and YOSHIKI YAMADA	Short electromyographic bursts in the rabbit digastric muscle during the jaw-closing phase	451
P. K. DENBESTEN, L. M. HEFFERNAN, J. D. B. FEATHERSTONE and C. P. SHIELDS	Fluoride binding by matrix proteins in rat mineralizing tissue	459
G. MENGHI, P. CECCARELLI, P. SCOCCO and V. PEDINI	The chicken anterior lingual glands: structural study of carbohydrate chains by lectins and glycosidases	463
G. E. WISE, F. LIN and W. FAN	Effects of transforming growth factor- $\beta_1$ on cultured dental follicle cells from rat mandibular molars	471
B. K. B. BERKOVITZ, S. ROBINSON, B. J. MOXHAM and D. PATEL	Ultrastructural quantification of collagen fibrils in the central region of the articular disc of the temporomandibular joint of the cat and the guinea pig	479
J. NICOLAU, D. N. DE SOUZA and H. R. MARTINS	Pilocarpine-induced increases in the activity of 6-phosphofructo-2-kinase and the fructose-2,6-bisphosphate content of rat salivary glands	483
P. A. MORRIS, R. E. S. PROUT, G. B. PROCTOR, J. R. GARRETT and L. C. ANDERSON	Lipid analysis of the major salivary glands in streptozotocin-diabetic rats and the effects of insulin treatment	489
S. KIMURA, T. YONEMURA, T. HIRAGA and H. OKADA	Flow cytometric evaluation of phagocytosis by peripheral blood polymorphonuclear leucocytes in human periodontal diseases	495
R. E. COHEN, B. NOBLE, M. E. NEIDERS, G. S. BEDI and R. L. COMEAU	Phenotypic characterization of resident macrophages in submandibular salivary glands of normal and isoproterenol-treated rats	503
<b>Short Communication</b> A. OJANOTKO-HARRI, H. FORSELL, M. LAINE, H. HURTIA, M. BLÄUER and P. TUOHIMAA	Immunohistochemical detection of androgen receptors in human oral mucosa	511
	Announcement	i

## NUMBER 7

C. I. HOOVER, C. Y. NG and J. R. FELTON	Correlation of haemagglutination activity with trypsin-like protease activity of <i>Porphyromonas gingivalis</i>	515
B. MATON, J. RENDELL, M. GENTIL and T. GAY	Masticatory muscle fatigue: endurance times and spectral changes in the electromyogram during the production of sustained bite forces	521
JC. SEAGRAVE, S. BARKER, M. CURRY and J. R. MARTINEZ	The effect of $\text{NH}_4\text{Cl}$ on $\text{Rb}^+$ fluxes in resting and stimulated rat submandibular acinar cells	531



T. MATSSON, K. G. SUNDQVIST, A. HEIMDAHL, G. DAHLÖF, P. LJUNGMAN and O. RINGDÉN	A comparative immunological analysis of the oral mucosa in chronic graft-versus-host disease and oral lichen planus	539
N. VASSILAKOS, J. RUNDEGREN, T. ARNEBRANT and P.-O. GLANTZ	Adsorption from salivary fractions at solid/liquid and air/liquid interfaces	549
G. S. GRIFFITHS, J. M. A. WILTON and M. A. CURTIS	Contamination of human gingival crevicular fluid by plaque and saliva	559
E. GEMMELL and G. J. SEYMOUR	Different responses in B cells induced by <i>Porphyromonas gingivalis</i> and <i>Fusobacterium nucleatum</i>	565
GABRIELE A. MACHO and JACOPO MOGGI CECCHI	Relationship between size of distal accessory tubercles and hypocones in permanent maxillary molar crowns of southern Africans	575
T. NEDERFORS and C. DAHLÖF	Effects of the $\beta$ -adrenoceptor antagonists atenolol and propranolol on human whole saliva flow rate and composition	579
M. S. TUNG, B. TOMAZIC and W. E. BROWN	The effects of magnesium and fluoride on the hydrolysis of octacalcium phosphate	585
<b>Short Communication</b> T. YAMADA, M. MOGI, T. KAGE, A. UEDA, J. NAKAJIMA and T. CHINO	Enhancement by cyclosporin A of metastasis from hamster cheek pouch carcinoma	593

## NUMBER 8

E. W. ODELL and P. J. WU	Susceptibility of <i>Porphyromonas gingivalis</i> and <i>P. asaccharolytica</i> to the non-oxidative killing mechanisms of human neutrophils	597
D. GAŠPERŠIČ	Histogenetic aspects of the composition and structure of human ectopic enamel, studied by scanning electron microscopy	603
A. VASILAS, L. MOLINA, M. HOFFMAN and C. G. HAIDARIS	The influence of morphological variation on <i>Candida albicans</i> adhesion to denture acrylic <i>in vitro</i>	613
DONALD B. GALBRAITH, LESLIE S. CUTLER and EDWARD J. KOLLAR	The correlation of temporal regulation of glycosaminoglycan synthesis with morphogenetic events in mouse tooth development	623
TADASHI IIZUKA, MATTHEW CIELINSKI, S. LEA AUKERMAN and SANDY C. MARKS JR	The effects of colony-stimulating factor-1 on tooth eruption in the toothless (osteopetrotic) rat in relation to the critical periods for bone resorption during tooth eruption	629
S. MEGHJI, M. WILSON, B. HENDERSON and D. KINANE	Anti-proliferative and cytotoxic activity of surface-associated material from periodontopathogenic bacteria	637
S. JEPSEN, P. SCHILTZ, D. D. STRONG, S. H. SCHARLA, M. L. SNEAD and R. D. FINKELMAN	Transforming growth factor- $\beta_1$ mRNA in neonatal ovine molars visualized by <i>in situ</i> hybridization: potential role for the stratum intermedium	645
E. NAGATA, T. KONDO, N. AYASAKA, M. NAKATA and T. TANAKA	Immunohistochemical study of nerve fibres with substance P- or calcitonin gene-related peptide-like immunoreactivity in the junctional epithelium of developing rats	655
<b>Short Communications</b> A. TRIANTAFYLLOU, J. D. HARRISON, J. R. GARRETT and AUDREY KIDD	Increase of microliths in inactive salivary glands of cat	663
E. ISOGAI, K. HIROSE, N. FUJII and H. ISOGAI	Three types of binding by <i>Porphyromonas gingivalis</i> and oral bacteria to fibronectin, buccal epithelial cells and erythrocytes	667
Y. MUNAKATA, M. TSUJI and S. KASAI	The origin of short- and long-latency mylohyoid nerve responses elicited by high-intensity electrical stimulation of intradental nerve in cats	671
S. KATO, H. NAKAGAKI, H. KUNISAKI, N. SUGIHARA, T. NOGUCHI, F. ITO, I. YOSHIOKA, J. A. WEATHERELL and C. ROBINSON	The thickness of the sound and periodontally diseased human cementum	675

# NUMBER 9

REINHILDE JACOBS, DANIEL VAN STEENBERGHE and AN SCHOTTE	The importance of visual feedback on the accuracy of jaw and finger positioning in man	677
S. A. SIMON and H. C. BAGGETT	Identification of muscarinic acetylcholine receptors in isolated canine lingual epithelia via voltage clamp measurements	685
V. F. FERRARIO, C. SFORZA, A. MIANI JR, A. COLOMBO and G. TARTAGLIA	Mathematical definition of the curve of Spee in permanent healthy dentitions in man	691
YOH HISADA, AKIRA MATSUMOTO and YOSHITAKA YOSHIMURA	Changes in protein kinase C activity in rat calvarial bone cells cultured in a low-calcium environment	695
JC. SEAGRAVE, M. CURRY, R. CHANEY RAMSEY and J. R. MARTINEZ	Intracellular pH changes induced by exposure to weak acids and bases in submandibular cells of early postnatal rats	699
D. L. PIKULA, E. F. HARRIS, D. M. DESIDERIO, G. H. FRIDLAND and J. L. LOVELACE	Methionine enkephalin-like, substance P-like, and $\beta$ -endorphin-like immunoreactivity in human parotid saliva	705
J. R. GARRETT, D. C. WINSTON, G. B. PROCTOR and B. A. SCHULTE	Na,K-ATPase in resting and stimulated submandibular salivary glands in cats, studied by means of ouabain-sensitive, K <sup>+</sup> -dependent p-nitrophenylphosphatase activity	711
K. HIRATSUKA, Y. ABIKO, M. HAYAKAWA, T. ITO, H. SASAHARA and H. TAKIGUCHI	Role of <i>Porphyromonas gingivalis</i> 40-kDa outer membrane protein in the aggregation of <i>P. gingivalis</i> vesicles and <i>Actinomyces viscosus</i>	717
J. K. DYER, R. A. REINHARDT, T. M. PETRO and E. A. STROM	Serum antibody responses in human periodontitis to cellular components of <i>Capnocytophaga</i>	725
JOHN LEONORA, JEAN-MARC TIECHE and RALPH R. STEINMAN	The effect of dietary factors on intradentinal dye penetration in the rat	733
N. SHIMIZU, N. OGURA, M. YAMAGUCHI, T. GOSEKI, Y. SHIBATA, Y. ABIKO, T. IWASAWA and H. TAKIGUCHI	Stimulation by interleukin-1 of interleukin-6 production by human periodontal ligament cells	743
Y. BARLOW and J. C. SOUTHAM	Plasminogen activators in normal and malignant oral epithelium <i>in vivo</i> and <i>in vitro</i>	749
<b>Short Communications</b> M. P. HECTOR and A. SULLIVAN	Migration of erythrosin-labelled saliva during unilateral chewing in man	757
J. R. GARRETT, D. C. WINSTON, G. B. PROCTOR, B. A. SCHULTE and L. C. ANDERSON	Changes in the lectin-binding of capillaries in rat salivary glands after streptozotocin-induced diabetes	759

# NUMBER 10

T. W. HURLEY and R. W. BRINCK	Differential regulation of agonist-stimulated Ca <sup>2+</sup> influx in acini of rat pancreas and submandibular gland	763
L. S. CHEN, R. I. COUWENHOVEN, D. HSU, W. LUO and M. L. SNEAD	Maintenance of amelogenin gene expression by transformed epithelial cells of mouse enamel organ	771
J. D. VAN WILLIGEN, A. SCHAAFSMA, M. L. BROEKHUIJSEN and P. J. W. JÜCH	Perception of forces exerted by jaw and thumb	779
R.-F. LIANG, S. NISHIMURA and S. SATO	Effects of epidermal growth factor and transforming growth factor- $\beta$ on insulin-induced differentiation in rat dental pulp cells	789
P. A. ROBINSON, A. S. HIGH and W. J. HUME	Rapid detection of human herpes simplex virus type 1 in saliva	797
S. NAKAMURA, A. TAKEUCHI, Y. MASAMOTO, Y. ABIKO, M. HAYAKAWA and H. TAKIGUCHI	Cloning of the gene encoding a glycylprolyl aminopeptidase from <i>Porphyromonas gingivalis</i>	807



R. T. EVANS, B. KLAUSEN, N. S. RAMAMURTHY, L. M. GOLUB, CORNELIA SFINTESCU and R. J. GENCO	Periodontopathic potential of two strains of <i>Porphyromonas gingivalis</i> in gnotobiotic rats	813
N. O. SALAKO and I. KLEINBERG	Comparison of the effects of galactose and glucose on the pH responses of human dental plaque, salivary sediment and pure cultures of oral bacteria	821
FAN LIN, WEI FAN and GARY E. WISE	Isolation of granule proteins from cells of the dental follicle and stellate reticulum of rat mandibular molars	831
FAN LIN, WEI FAN and GARY E. WISE	Granule proteins of the dental follicle and stellate reticulum inhibit tooth eruption and eyelid opening in postnatal rats	841
A. S. McMILLAN and A. G. HANNAM	Task-related behaviour of motor units in different regions of the human masseter muscle	849
<b>Short Communication</b>		
D. HINODE, A. NAGATA, S. ICHIMIYA, H. HAYASHI, M. MORIOKA and R. NAKAMURA	Generation of plasma kinin by three types of protease isolated from <i>Porphyromonas gingivalis</i>	381 859

## NUMBER 11

B. L. SLOMIANY, Z. FEKETE, J. LIU, V. L. N. MURTY and A. SLOMIANY	Activation of dihydropyridine-sensitive parotid salivary gland calcium channels by epidermal growth factor	863
C. Y. WU-WANG, S.-L. WANG, C. LIM, A. SLOMIANY and B. L. SLOMIANY	Effect of ethanol on prostaglandin E <sub>2</sub> receptor in rat submandibular salivary glands	869
T. TABATA and K. KARITA	Effect of tooth temperature on activities of slowly adapting periodontal mechanoreceptors in the cat	875
J. DOBSON and M. WILSON	Sensitization of oral bacteria in biofilms to killing by light from a low-power laser	883
A. TUXEN, M. BAKKE and B. KENRAD	Histochemical characterization of masseter muscle fibres in a biopsy study of normal young women	889
M. TELLERVO LAINE, RIITTA H. PAHKALA, S. MARJATTA JAROMA and MARI J. QVARNSTRÖM	Associations among different orofacial dysfunctions in 6-8 year olds	895
M. L. SWIFT and M. R. BYERS	Effect of ageing on responses of nerve fibres to pulpal inflammation in rat molars analysed by quantitative immunocytochemistry	901
C. H. SISSONS, T. W. CUTRESS, G. FAULDS and L. WONG	pH responses to sucrose and the formation of pH gradients in thick 'artificial mouth' microcosm plaques	913
T. LAINE, L. ALVESALO and S. LAMMI	A study in 47,XYX men of the expression of sex-chromosome anomalies in dental occlusion	923
J. W. BAWDEN, T. G. DEATON, G. G. KOCH and B. P. CRAWFORD	Fluoride uptake in hard tissues of fetal guinea pigs in response to various dose regimens	929
S. MEGHJI, B. HENDERSON, Y. BANDO and M. HARRIS	Interleukin-1: the principal osteolytic cytokine produced by keratocysts	935
M. Y. P. KUO, W. H. LAN, S. K. LIN, K. S. TSAI and L. J. HAHN	Collagen gene expression in human dental pulp cell cultures	945
H. AKITA, M. FUKAE, S. SHIMODA and T. AOBA	Localization of glycosylated matrix proteins in secretory porcine enamel and their possible functional roles in enamel mineralization	953
L. R. EVERSOLE, KENNETH T. MIYASAKI and RUSSELL E. CHRISTENSEN	The distribution of the antimicrobial protein, calprotectin, in normal oral keratinocytes	963
P.-A. LARSSON, J. M. HIRSCH, J. S. GRONOWITZ and A. VAHLNE	Inhibition of herpes simplex virus replication and protein synthesis by non-smoked tobacco, tobacco alkaloids and nitrosamines	969

# Short Communication

ISABELLE LAUWERYNS,  
NATHALIE VAN CAUWENBERGHE,  
CARINE CARELS, DANIEL VAN STEENBERGHE  
and ROBERT VLIETINCK

The validity of the masseteric post-stimulus electromyographic complex: a twin study 979

## NUMBER 12

- |   |   |      |
|---|---|------|
| KATSUYA SAKURAI, KAORU YAMASHITA<br>and KOHJI HARA                                      | Development and characterization of <i>Porphyromonas gingivalis</i> -specific rat T-cell clones   | 983  |
| B. ÅSMAN and K. BERGSTRÖM   | Expression of Fc-γ-RIII and fibronectin in peripheral polymorphonuclear neutrophils with increased response to Fc stimulation in patients with juvenile periodontitis | 991  |
| DAN STRÖM and STEN HOLM   | Bite-force development, metabolic and circulatory response to electrical stimulation in the canine and porcine masseter muscles                                       | 997  |
| E. SUGIYAMA, P. BAEHNI and G. CIMASONI  | An <i>in vitro</i> study of polymorphonuclear leucocyte-mediated injury to human gingival keratinocytes by periodontopathic bacterial extracts                        | 1007 |
| N. P. KEREZOUZIS, L. OLGART,<br>L. EDWALL, B. GAZELIUS and<br>G. G. NOMIKOS             | Activation of sympathetic fibres in the pulp by electrical stimulation of rat incisor teeth   | 1013 |
| CARIN SAHLBERG, PAULA REPONEN,<br>KARL TRYGGVASON and IRMA THESLEFF                     | Association between the expression of murine 72 kDa type IV collagenase by odontoblasts and basement membrane degradation during mouse tooth development              | 1021 |
| J. KIRKHAM, C. ROBINSON, A. J. SMITH<br>and J. A. SPENCE                                | The effect of periodontal disease on sulphated glycosaminoglycan distribution in the sheep periodontium   | 1031 |
| J. T. MAYHALL and L. ALVESALO   | Dental morphology of 45,XO human females: molar cusp area, volume, shape and linear measurements  | 1039 |
| Y. TSUKAMOTO, S. FUKUTANI,<br>T. SHIN-IKE, T. KUBOTA, S. SATO,<br>Y. SUZUKI and M. MORI | Mineralized nodule formation by cultures of human dental pulp-derived fibroblasts   | 1045 |
| S. P. MCCURDY, B. H. CLARKSON and<br>F. F. FEAGIN                                       | Comparison of phosphoprotein isolated from mature and immature human tooth roots  | 1057 |
| JIA-HUEY YU and ROBERT S. REDMAN  | Effects of clonidine on the calcium content and morphology of rat salivary glands   | 1067 |
| C. A. SHUTTLEWORTH, LINDA BERRY and<br>CAY M. KIELTY                                    | Microfibrillar components in dental pulp: presence of both type VI collagen- and fibrillin-containing microfibrils  | 1079 |
| A. HIURA and H. ISHIZUKA  | Quantitative electron-microscopic analyses of pulpal nerve fibres in the mouse lower incisor after neonatal capsaicin treatment                                       | 1085 |
| <b>Short Communications</b><br>H. KIERDORF and U. KIERDORF                              | Occurrence of a postpermanent mandibular fourth premolar in a moose bull ( <i>Alces alces</i> L.)   | 1091 |
| P. K. DENBESTEN and R. S. LI  | Characterization of amelogenin mRNA from secretory- and maturation-stage rat incisor enamel   | 1097 |

**Reproduced with the permission of Pergamon Press Inc., by University  
Microfilms Inc. Duplication or resale without permission is prohibited.**



